



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q60439

Jean-Charles MERCIER, et al.

Appln. No.: 09/653,408

Group Art Unit: 2834

Confirmation No.: 5345

Examiner: J. Gonzalez

Filed: August 31, 2000

For: A WIND-POWER GENERATOR POD CONSTITUTED BY THE BODY OF AN
ELECTRICITY GENERATOR

APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 1.192, Appellants submit the following:

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Alstom. Assignment of the application was submitted to the U.S. Patent and Trademark Office on October 26, 2000, and recorded on the same date at Reel 011267, Frame 0678.

II. RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-7 are pending in the application, with claim 1 being the only claim in independent form. Claims 1 and 5-7 remain rejected under 35 U.S.C. § 103(a) as being obvious over U.S. 4,366,387 to Carter, Jr. et al. ("Carter") in view of U.S. 5,903,073 to Mukai ("Mukai"); claim 2 remains rejected under 35 U.S.C. § 103(a) as being obvious over Carter and Mukai, and further in view of U.S. 4,350,898 to Benoit ("Benoit"); claim 3 remains rejected under 35 U.S.C. § 103(a) as being obvious over Carter and Mukai, and further in view of U.S. 6,133,659 to Rao ("Rao"); and claim 4 remains rejected under 35 U.S.C. § 103(a) as being obvious over Carter and Mukai, and further in view of U.S. 5,977,667 to Hirose ("Hirose").

Claims 1-7 are set forth in the attached Appendix.

IV. STATUS OF AMENDMENTS

No claim amendments were requested subsequent to the November 29, 2002 final Office Action.

V. SUMMARY OF THE INVENTION

The present invention relates in general to a wind-power generator pod, and more particularly to a pod having a fairing that forms the body of a generator.¹ An exemplary embodiment is depicted in the Figure of the application. As shown, the pod 1 is mounted on a mast 2.² A generator, which includes a stator 3 and a rotor 4, is mounted on the inside of the pod

¹ Spec., p. 1, fourth full paragraph.

² Spec., p. 2, fifth full paragraph.

1 and is coupled to a propeller 5.³ The pod 1 includes a fairing 7 that constitutes the body of the generator.⁴ That is, the fairing 7 and the body of the generator are the same element. As shown in the Figure, the fairing 7 is fit onto the stator 3.⁵ In this way, the fairing 7 serves as a heat exchange surface for cooling the stator 3.⁶

A sleeve 8 may also be provided around the fairing 7.⁷ The sleeve 8 is held apart from the fairing 7 by support members 9.⁸ The sleeve 8 causes air to flow over the pod 1 in a laminar fashion.⁹

VI. ISSUE

Whether the Examiner's rejection of independent claim 1 under 35 U.S.C. § 103(a) as being obvious over Carter in view of Mukai is proper.

VII. GROUPING OF CLAIMS

The claims of the present application may be properly considered in a single group and therefore they stand or fall together.

³ Spec., p. 2, sixth full paragraph.

⁴ Spec., paragraph bridging pp. 2-3.

⁵ Spec., p. 3, third full paragraph.

⁶ Spec., p. 2, first and second full paragraphs; and p. 3, third full paragraph.

⁷ Spec., paragraph bridging pp. 1-2.

⁸ Spec., p. 3, first full paragraph.

⁹ Spec., p. 1, fifth full paragraph.

VIII. ARGUMENTS

Independent claim 1 recites (among other things) that *the stator contacts the fairing*. At least this feature, in combination with the other recited claim limitations, is not taught or suggested by the prior art relied upon by the rejection grounds.

The Examiner looks to Carter to teach all of the features of the present invention, except for the claimed “contact” between the stator and the fairing, and therefore looks to Mukai to teach this feature. In so doing, the Examiner attempts to rely upon a modification of Carter that involves relocating the stator of the generator 34 so that it contacts the streamlined housing 32 (which is compared by the Examiner to the fairing of the present invention).

The Carter Reference

Carter discloses a wind-driven generator apparatus that includes a head assembly 18. With reference to Fig. 2, the head assembly 18 includes a generator 34 that is provided on the inside of a streamlined housing 32. The generator 34 has its own housing, which is the cylindrical element positioned between the gear box 36 and the electrical component 40. The cylindrical housing of the generator 34 is a distinct and separate element from the streamlined housing 32.

The Mukai Reference

Mukai is directed to an alternator. As shown in Fig. 1, the disclosed alternator 1 includes a stator 3 with a core 31 mounted on the front half 7 of the alternator housing.

Analysis

The final rejection of claim 1 should be reversed for at least the following three reasons.

First, if those skilled in the art were somehow motivated to combine Carter and Mukai, they would not have arrived at the specific structure defined by claim 1. Instead, and with reference to Fig. 2 of Carter, those skilled in the art would have been motivated (at best) to position the stator of the generator 34 on the inside surface of the generator housing (which is the cylindrical housing positioned between the gear box 36 and the electrical component 40), but not the streamlined housing 32. This is because the secondary reference to Mukai merely discloses an alternator 1 having a stator 3 with a core 31 mounted on the front half 7 of the alternator housing. Mukai does not, however, provide any relevant teachings regarding the placement of the stator relative to a fairing. Indeed, Mukai's device does not even include a fairing, which is an element that reduces wind drag. At least in this respect, the Examiner's reliance upon the Mukai reference is misplaced.

In the Response to Arguments section of the November 29, 2002 Office Action, the Examiner disagrees with the above traversal argument because claim 1 does not set forth an explicit definition for the term "fairing."¹⁰ However, Appellants do not believe that it is necessary to recite an explicit definition to define over the prior art. MPEP 2111.01 indicates that during examination, the words of the claim must be given their plain meaning, unless applicant has provided a clear definition in the specification. Further, when the term is not defined by the applicant in the specification, the words must be read as they would be interpreted by those of ordinary skill in the art. In this case, Appellants have not provided a definition of the

¹⁰ November 29, 2002 Office Action, paragraph bridging pp. 5-6.

term “fairing” in the specification. Further, those skilled in the art of wind-powered generators would recognize and interpret the term “fairing” as an element that reduces wind drag, and this interpretation is consistent with the plain meaning of the term.

Furthermore, the Examiner seems to intimate that Appellants’ arguments involve an attempt to read limitations from the specification into the claim.¹¹ This is simply not the case. In essence, Appellants’ assert that the alleged combination of references involves an incorrect comparison between *apples and oranges*: i.e., the grounds of rejection appear to compare Mukai’s alternator housing 7, 8 to Carter’s streamlined housing 32. Such a comparison of elements is incorrect because, for argument sake, Mukai’s alternator housing 7, 8 should be compared to Carter’s generator housing (not Carter’s streamlined housing 32). More specifically, Mukai’s alternator housing 7, 8 is comparable to Carter’s generator housing due to similarities in structure and function. For example, both housings contain bearings that rotatably support a rotor shaft (see the rotor shaft 24 in Fig. 1 of Mukai, and the rotor shaft 90 in Figs. 5 and 6 of Carter). Further, both housings support the other elements (i.e., the stator and the rotor) that are operatively connected to the driving mechanism (i.e., Mukai’s pulley 9 and Carter’s propeller 14, 16) for the generation of electricity. For these reasons, Mukai’s alternator housing 7, 8 and Carter’s generator housing are comparable.

In sharp contrast, however, Carter’s streamlined housing 32 does not rotatably support the rotor shaft 90 or any other constituent element of the generator 34. In fact, and with

¹¹ November 29, 2002 Office Action, p. 7, first full paragraph.

reference to Fig. 6, Carter explains that the generator 34 is supported by a yaw bearing structure 100 provided at the top of the tower 12.¹² In view of these practical and conceptual differences, Mukai's alternator housing 7, 8 is simply not comparable to Carter's streamlined housing 32.

Second, although not explicitly stated, the alleged modification to Carter appears to involve dispensing with either the streamlined housing 32 or, in the alternative, the generator housing (which is inside the streamlined housing 32). However, the rejection grounds are not at all clear with respect to the specific modification being relied upon. In any event, Appellants note that the streamlined housing 32 performs many desirable functions, including shielding electrical components from the exterior environment, and reducing the drag associated with the air flow across the head assembly 18. Consequently, those skilled in the art would not have been motivated to implement any modification that involves dispensing with the streamlined housing 32.

Similarly, Appellants submit that those skilled in the art would not have been motivated to implement any modification that involves dispensing with the generator housing. This is because such a modification would necessarily involve significant and complicated modifications to the interior surface of the streamlined housing 32. For example, the interior surface of the streamlined housing 32 would need to be drastically altered so that it could appropriately support the constituent elements of the generator 34. Such modifications are far too involved and cumbersome to be considered obvious in view of Mukai.

¹² Carter, col. 5, l. 29-33.

Third, the Examiner assert that Mukai teaches that the stator core 31 is positioned in contact with the alternator housing (or frame) for the purpose of cooling down the stator coil 32.¹³ However, the heavy reliance upon Mukai is misplaced.

Mukai does indicate that it is desirable to cool down the stator coil. To this end, and with reference to Fig. 1 of Mukai, fins (or heat conductive members) 33, 34 are placed in contact with the stator coil 32. Heat generated in the stator coil 32 is conducted to the fins 33, 34; the fins 33, 34 are cooled down by a cooling air flow from fans 25, 26 and heat conduction to the frame.¹⁴ Mukai does not, however, indicate that the contact between the stator core 31 and the frame enhances or facilitates the cooling of the stator coil 32. The Examiner's assertions to the contrary are incorrect. At least in this regard, the relied upon combination of references appears to be based upon an impermissible hindsight of the present application.

Conclusion

Appellants have invented a wind-powered generator pod in which the stator contacts the fairing. As compared to conventional pods, the claimed invention has a simplified structure and improved cooling characteristics. Those skilled in the art would not have been motivated to reposition Carter's stator so that it contacts the streamlined housing 32. The Examiner's assertions to the contrary involve an incorrect comparison of apples to oranges, and seem to be

¹³ November 29, 2002 Office Action, p. 2, fourth full paragraph.

¹⁴ Mukai, col. 2, l. 7-22.

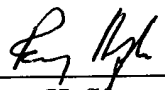
'APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192
U.S. Appln. No.: 09/653,408 (*Q60439*)

based in large part on an impermissible hindsight of the present application. Consequently, claim 1 is patentable, and claims 2-7 are patentable at least by virtue of their dependencies.

The present Brief on Appeal is being filed in triplicate. Unless a check is submitted herewith for the fee required under 37 C.F.R. §1.192(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

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APPENDIX

CLAIMS 1-7 ON APPEAL:

1. A wind-power generator pod comprising:

a rigid fairing in which at least one electricity generator is disposed for coupling to at least one wind-driven propeller, wherein the rigid fairing constitutes the body of the generator in which a stator and a rotor are mounted, such that the stator contacts the fairing.
2. The pod according to claim 1, in which the rigid fairing is surrounded by a tubular sleeve forming a substantially annular air passage between the rigid fairing and the tubular sleeve.
3. The pod according to claim 1, in which the rigid fairing is attached to the stator of the generator via an interference fit.
4. The pod according to claim 1, in which lateral openings extend through the stator.
5. The pod according to claim 1, in which the generator is coupled to the wind-driven propeller via an epicyclic gearbox
6. The pod according to claim 5, in which the gearbox is mounted inside the rigid fairing.
7. A wind-powered generator comprising a pod according to claim 1 and mounted to swivel at the end of a mast.